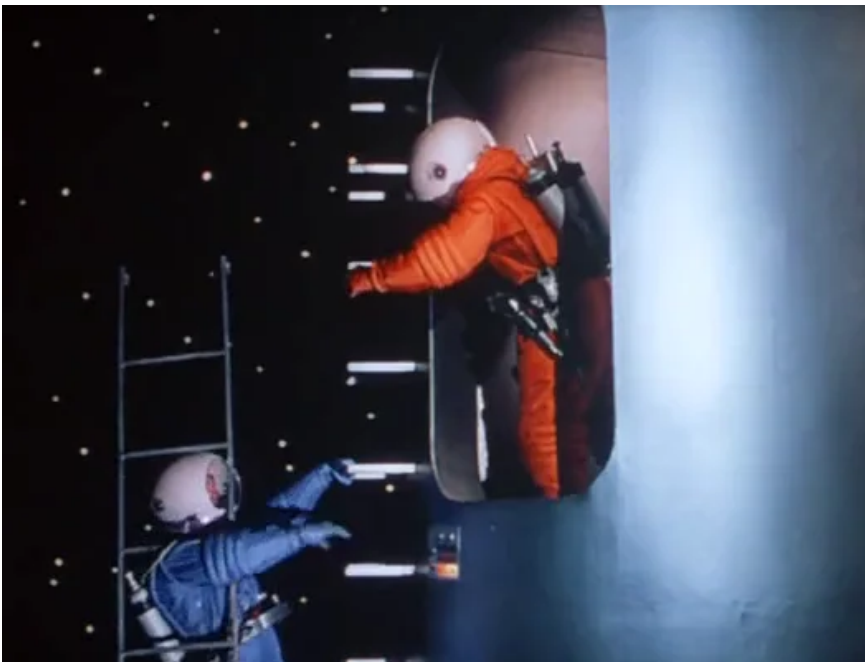


12. В качестве доказательств пребывания людей на Луне NASA предоставило кукольные мультфильмы.

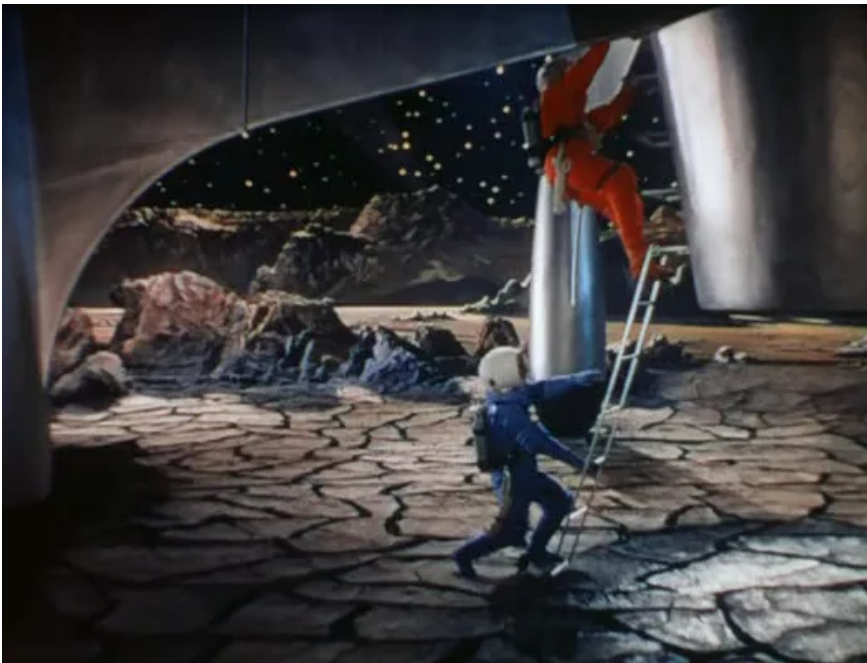
17-21 minutes

Today I will reveal the most important US space secret - how the shots were shot "on the Moon". We are not talking about a single photo frame or a specific video. It will focus on how hundreds of photographs and dozens of "lunar" videos were obtained. If you are ready to hear the truth about the Apollo missions, here it is: **shooting images on the Moon for the Apollo missions in production technology was no different from the way of filming any other American space-themed films. Absolutely the same techniques were used: medium and general shots were filmed with actors, and for long shots, when it was necessary to show the lunar landscape, models and dolls were used, which most often moved due to the fact that they were filmed using the method of time-lapse animation.**

Take for comparison the film "Destination Moon", USA, 1950. The film won an Oscar for special effects in 1951, and one Oscar nomination for Best Production Design. It is now quite obvious to any viewer that all the scenes that take place in this film on the moon were filmed in the pavilion. Several hundred square meters of black velvet stretched over the backdrop, and car bulbs as "stars" became the starry sky. In the middle and general shots, we see the astronaut actors.

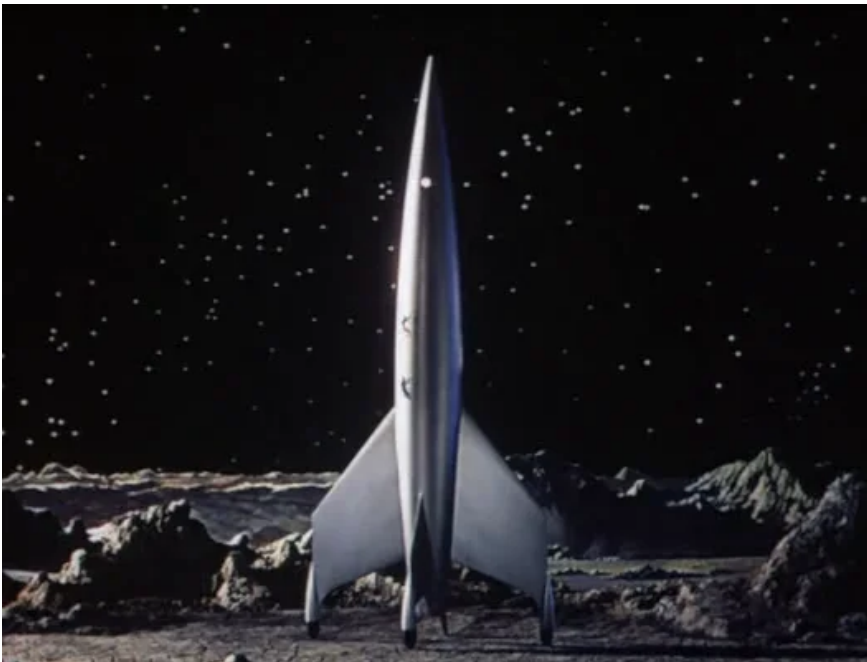


Medium plan



General plan from the movie "Destination - Moon", USA, 1950

When it is necessary to show how astronauts descend along the entire rocket from the hatch above, then instead of a full-size rocket, they show a model, a reduced copy. The actors are replaced with dolls that move through time-lapse animation.



The distant shot is a model of a rocket; two small pupae are attached in the middle.

Filming a full-size 40-meter rocket, which is the height of a 12-storey building, would require an incredible pavilion that could not be illuminated by any single directional light source. Therefore, the rocket is replaced with a mock-up, a little higher than a person's height, and instead of astronauts, pupae on hinges are used.

These pupae cannot move by themselves, so their movements are shot frame by frame: they were shot in one position, moved a little, shot another frame. Etc..

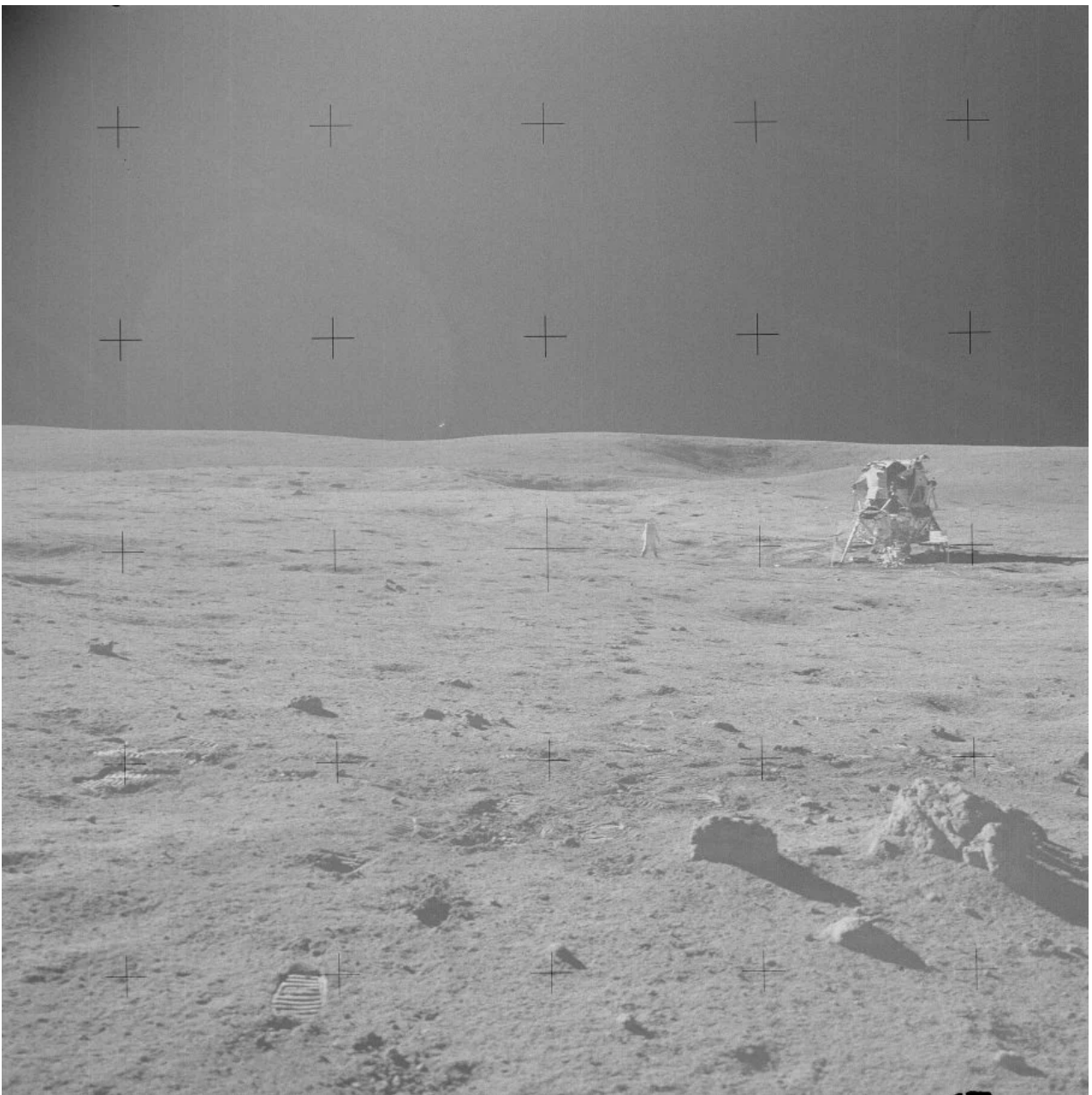


For distant shots, small pupae are used,

Filming of dolls is carried out in a relatively small pavilion.

We see exactly the same approach in the Apollo missions. Medium and general shots are filmed with astronaut actors. And when it is necessary to show lunar landscapes and small figures of astronauts in the distance, then a sense of distance is achieved due to the small astronaut pupae.

Here is a typical shot from the Apollo 14 mission. Here, the astronaut is a small doll, and on the right in the frame is the model of the lunar module.



Snapshot AS14-68-9486.

This is a static photo frame with an astronaut doll. But there are also whole plots with puppet animation in the NASA collection. Puppet cartoons provided by NASA as evidence of human presence on the moon are usually done casually, in a hurry. The calculation was made on the fact that an astronaut in a spacesuit is a sedentary figure, and few people would guess that this is a doll.



An example of an astronaut doll

Dolls in the Apollo missions perform a minimum of movements, most often with one right hand, while the left one hangs in the air at a right angle all the time without movement.



A doll with a tassel approaches the camera. The arms of the second doll are bent at the elbow joints at right angles.

In addition, the doll cannot perform not only jumps on the moon - even a simple shuffling of feet with flying sand, so beloved by astronaut actors, the doll will not succeed - due to the fact that the frames in the cartoon are shot static, but static sand is not interesting to anyone. Such motionless sand would immediately reveal that we are facing a cartoon. Because of this, moving dolls are never shown in full growth, they are removed so that you cannot see the feet stepping on the sand - the dolls are constantly pushing around the camera up to the waist, maximum, knee-deep.

Pay attention to the video (allegedly "Apollo 16") that in order to imitate the passengers getting off the rover, the camera was shaken ... as if the dolls were really riding on this model.



A doll tries to dust off a fake camera

Even an inexperienced viewer can see that the brush in the hands of the first doll does not touch the lens at all, but passes somewhere near the camera. It is similar to how bad actors portray playing the piano - they wave their hands over the keyboard without touching the keys ... And the second doll stands almost all the time with its arms outstretched, hovering in the air. Apparently, the puppeteers were inexperienced.

You might be asking why you had to use dolls in such a simple shot? Isn't it easier to put live actors in front of the camera? It would be much more convincing.

But the shot is really tricky. It is like a long long drive on a rover, where at first only one road and a lunar landscape is visible, and at the end of the drive the "drivers" get off the rover to get out and stand in front of the camera. It is one thing to show only the road, and a completely different impression if a person appears at the beginning or at the end of a long panorama on the Moon. Imagine, you are driving in a car and with a video camera (or cell phone) filming the road through New York through the windshield. And say at the same time that you were there. Perhaps this will not be very convincing, since such a trip can be done without you. But if at the end of the frame you pan from the road to the car's interior, and there you are driving, then such an ending will convince everyone that you are telling the truth, and you really were there.

That is why NASA felt it was necessary to show the astronauts at the end of the long panorama to make the passage convincing.

This shot, which lasts 5 minutes, begins with the fact that the doll appears from behind the left border of the frame and with a wide brush, as it were, erases dust from the upper shiny surface of the TV camera. At the same time, it is clear that the upper mirror surface of the TV camera shines with cleanliness, no dust is noticeable, and there is no point in wiping anything there at all.



The doll first works with a brush, and then turns the mirror-shiny dummy of the TV camera.

The doll comes back, goes out of the frame, after which the whole picture starts to shake, as if someone is strongly shaking the rover behind the frame with a camera attached to it. This is how NASA tried to portray that the astronaut allegedly climbs onto the rover. Although, as trainings on Earth show, the astronaut could not climb onto the rover on his own, even in a lightweight props suit. Usually two or three people helped the astronaut to climb onto the rover. And the astronaut himself could not get off the rover either.



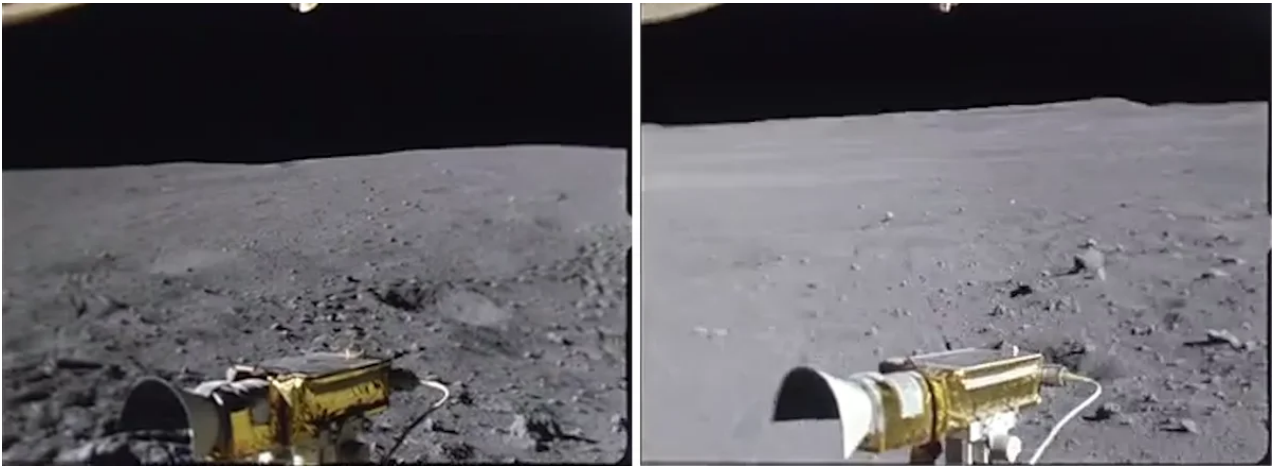
Two or three people help the astronaut to climb onto and off the rover.

How, then, get off the rover if there are no two assistants nearby, like on Earth? The answer looks like this. The astronaut approaches the rover, stands on the side of it, then jumps up high, at the top of the flight moves towards the rover and, dropping down, lands with his ass just on the seat ... More precisely, he does not "land", but "lands" on seat. And as if due to such a jolt, the camera installed on the rover swung sharply, the image jerked violently. In cinema, this is called "reflected action" - when, instead of the action itself, we are shown how it is reflected on other objects. There was an astronaut next to the rover ... a couple of seconds, the camera shook ... and he is supposedly already sitting in the rover.

After you look [video](#) , how astronauts on Earth are helped to climb onto a rover, vague doubts will creep in you (as in me at one time): can an astronaut in a heavy spacesuit and with a knapsack on his own, standing upright, jump so high in flight raise your legs at a right angle and land flat on the seat? Can an astronaut climb on and off the rover on his own? It is unlikely to be able to.

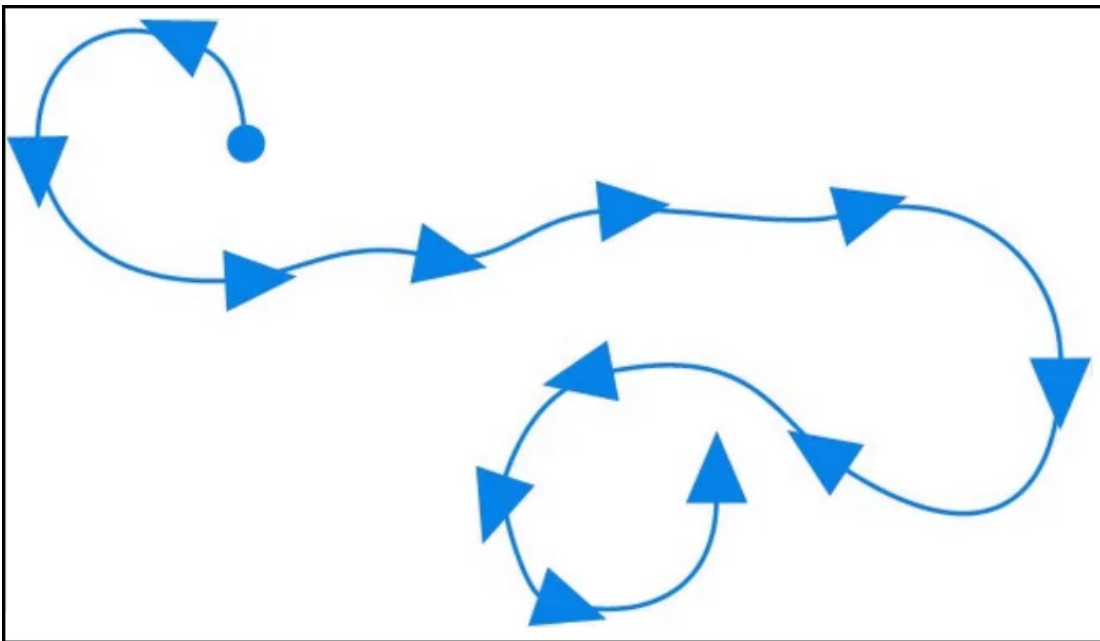
Such an important moment - how an astronaut climbs onto a rover on the Moon - was not recorded in the discussed five-minute video. During these five minutes of continuous film footage, we did not see this trick, we are first shown the doll in the foreground, and when it hides outside the frame, the camera is simply shaken, as if the doll has jumped onto a rover. But for some reason, after that, the doll reappears from outside the frame, everything is also waist-deep, no further, turns the TV camera again, leaves the frame, and half a minute after they began to show us this long boring plan, the rover, finally then, it gets under way and starts moving along the "lunar" landscape.

At the beginning of the journey, you can see that the shadows from the stones fall to the right, but after a few seconds - to the left - this rover is going in a circle.



The shadow of the pebbles at the beginning of the passage falls to the right, and then, with further advancement, to the left.

The direction of the trajectory changes several times and looks something like this:



Rover trajectory.

The rover winds around the same place for a long time and finally stops at the end of the 5th minute. And only then is the scene with two dolls played out, which we showed at the very beginning. According to NASA propagandists, by this time the rover had traveled about 10 km on the lunar surface, and in our opinion, all the movements of the toy rover could fit on a set smaller in size than a football field. On this site, models of lunar mountains were placed, small craters were dug and small pebbles were scattered.

There is such a profession - a layout designer, he makes small copies of various objects. Most often, these layouts are 6-10 times smaller than real objects.



Film director Andrei Tarkovsky checks the model of the house, the film "Sacrifice" (1986).

The shots with the puppets for the Apollo missions were filmed in the pavilion as an ordinary puppet show - on film, with a slight change in the position of the astronaut's hands from shot to frame. The result is a not very convincing movie about the moon, everything looks exactly like a puppet cartoon. It is physically difficult to look at the rover passages: not because they are boring and nothing happens there for five minutes, not because you immediately feel fake, but because the image jerks in short jerks all the time. The dolls move by freeze frames and make unnatural movements. The cartoonists who filmed this puppet show were well aware that they would not be able to achieve the believability of human movement from the puppet.

Shooting a cartoon is a very painstaking job. For example, at a Disney studio, it sometimes took a whole week to shoot a 20-second snippet. It will take 2-3 years to make a full-length puppet cartoon. But NASA employees had a different task - every six months for a new mission to issue whole series to the mountain. Therefore, nothing so painstaking was done: either there was a rush (to give the result to a certain number), or excessive

self-confidence (that people would not notice the substitution) - in general, the movements of the puppet astronauts turned out to be unnaturally clumsy.

Seeing from the first results that a not entirely convincing movie is obtained, the animators came up with and implemented a "trick" to save the situation from failure: the astronauts allegedly saved 16-mm film (the frames were filmed with a film camera), and therefore did not shoot at 24 frames per second. and at a speed of 6 fps. And then in the cinema laboratory, each static frame was multiplied (repeated 4 times) to make 24 frames in a second, since 24 fps is the standard frequency of showing a movie in a cinema. The result is short freeze frames, changing 6 times per second. This is how NASA presented this puppet show.

The video was redone again for broadcasting. Since in America the frequency of alternating current is 60 Hz, then the film is shown on television at a speed of 30 frames per second. The video footage of the rover's passage, now posted on U-Tuba, has just been converted to US standards for showing at a speed of 30 fps. And if you examine this frame by frame in the editing program, you will see that 6 frames of the puppet show, shot per second, were turned into 30 frames necessary for showing by duplicating each frame 5 times. The first frame is repeated five times, then the second frame is repeated 5 times, the third frame is repeated five times, and so on. Because of such freeze frames, "jerky" and jerky movements occur.

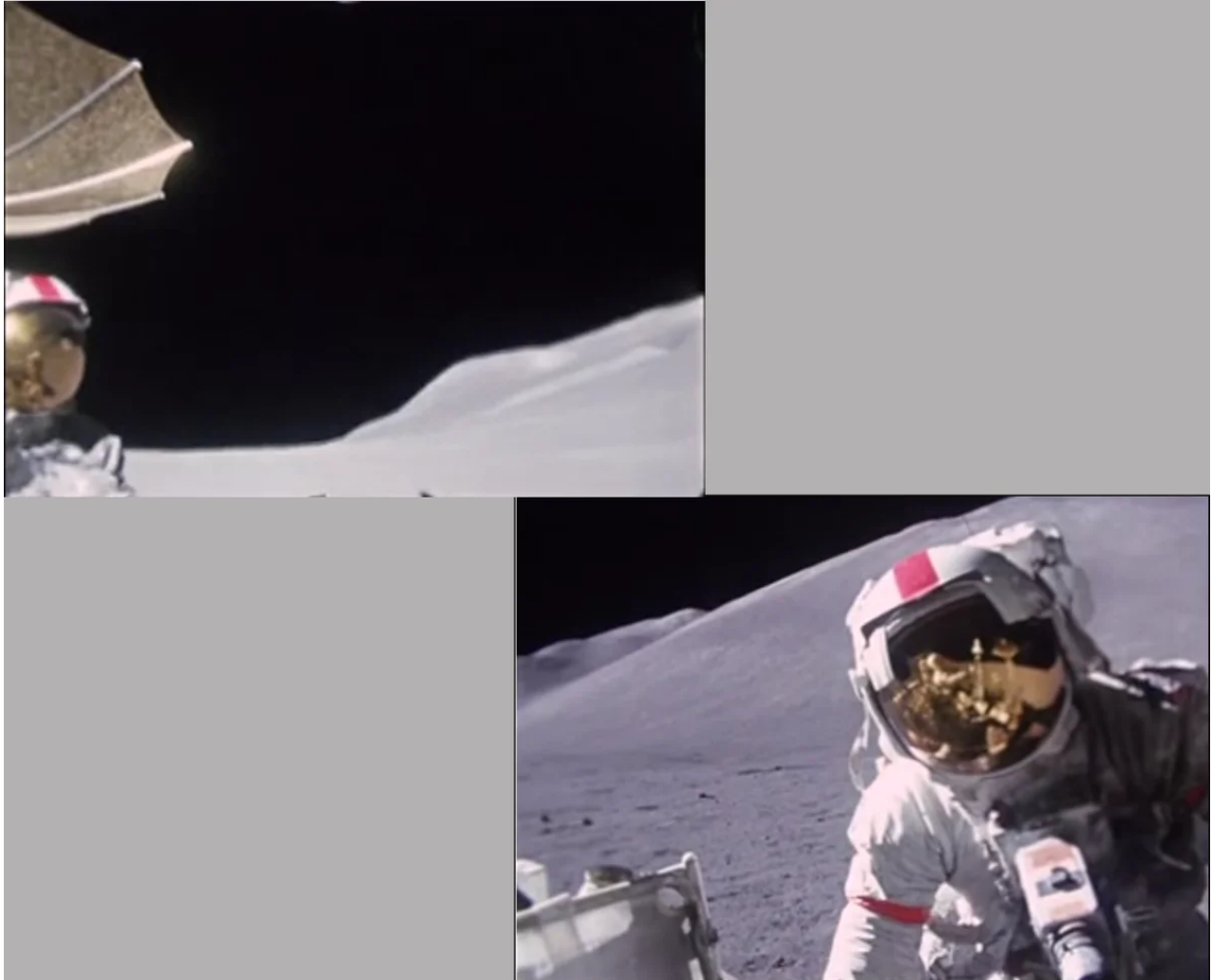
In our opinion, the trick with freeze frames did not help in any way: the fact that there are dolls in the frame instead of people is still readable unambiguously.

Take rover passes from another mission, such as NASA's Apollo 15 Mission Footage, which is a long rover drive through the lunar landscape. As conceived by NASA, these passages are made with a 16-mm movie camera, mounted on the rover on the right side (in the direction of travel).



16-mm film camera "Maurer".

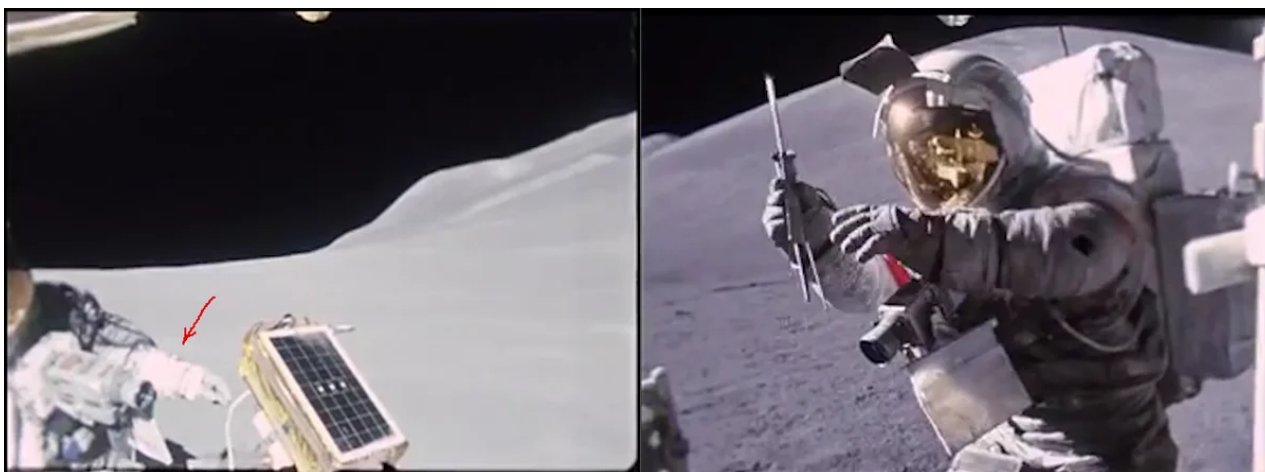
This long tedious drive from the Apollo 15 mission, just like in the Apollo 16 mission, was shot frame by frame, using dolls and models. After a while, the rover stops, and a doll appears from the left border of the frame. astronaut. Within two minutes, the doll makes some movements, such as straightens the antenna, and then after rough gluing in the frame, instead of the doll, there is a living person. In addition, the background behind the astronaut changes, the tonality of the frame changes, and a bluish-lilac tint appears.



Two frames were taken from the same place, but the texture of the background suddenly changed.

In the frame where the living person (on the right), we see the soft outlines of the mountain and textured, with pebbles, the ground behind the actor-astronaut against the background. And in the frame with the doll, which goes back to back (on the left), the background is already slightly different, the mountain is not very similar to the one in the previous shot, and the whole landscape behind it has become kind of "blurry". It can be seen that the background is a sham, although the idea is that the first frame, that the second, is shot from the same place.

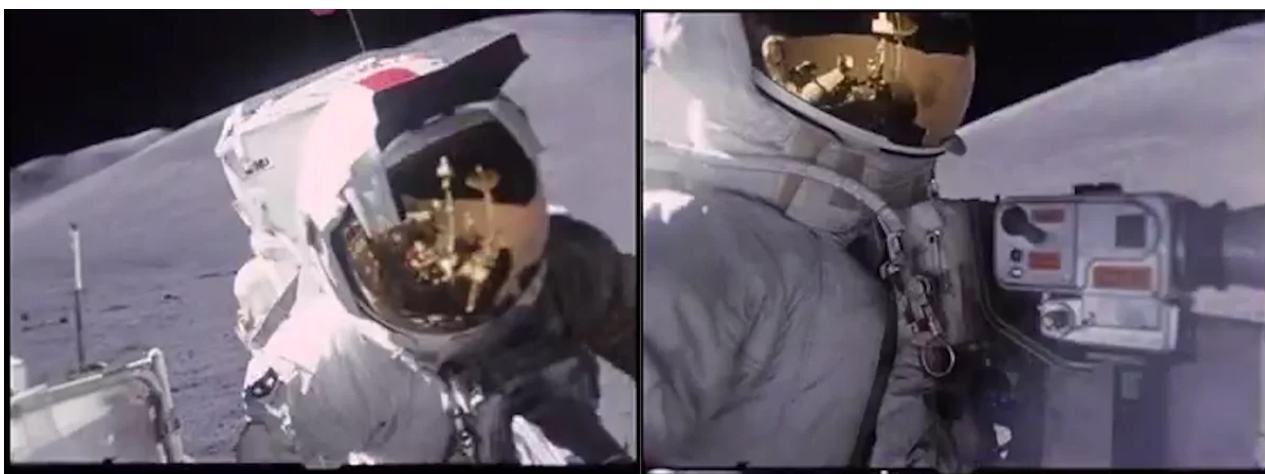
And here's another strange thing. While the doll was in the frame, and we saw her motionless hand for 39 seconds, the doll did not move a single finger. A whole 39 seconds! Only a sheet of paper attached to the camera swayed in the wind. But as soon as a living person appeared after gluing, he immediately began to move his hands, move his fingers, twist some part in his hands (this is a gnomon) and attach it somewhere to the back of the rover.



On the left - the motionless hand of the doll, on the right - the actor moves all his fingers.

Here's how on [The video](#) looks like the appearance of a doll with a motionless hand.

Then the actor pretends to get on the rover, but since we know that he could not do it on his own (without the help of two assistants), this moment is not shown. The astronaut walks up to the rover ... and sits right there. A rough gluing ensues in the place where the landing trick should be, but it is not, instead - bam! ... (gluing) - and the stationary doll is already sitting on the rover (frame on the right).



A live actor (frame on the left) is replaced by a motionless doll (frame on the right) through gluing.

And, as you probably guessed, that the static (ie, shot with virtually no camera movement) plan with a live actor was replaced with a doll so that the doll could "ride" for a long time around the pavilion among the fake mountains. And they put a living person in the editing for a few seconds, so that the viewer thought that before and after this short shot, a living person was also shown.

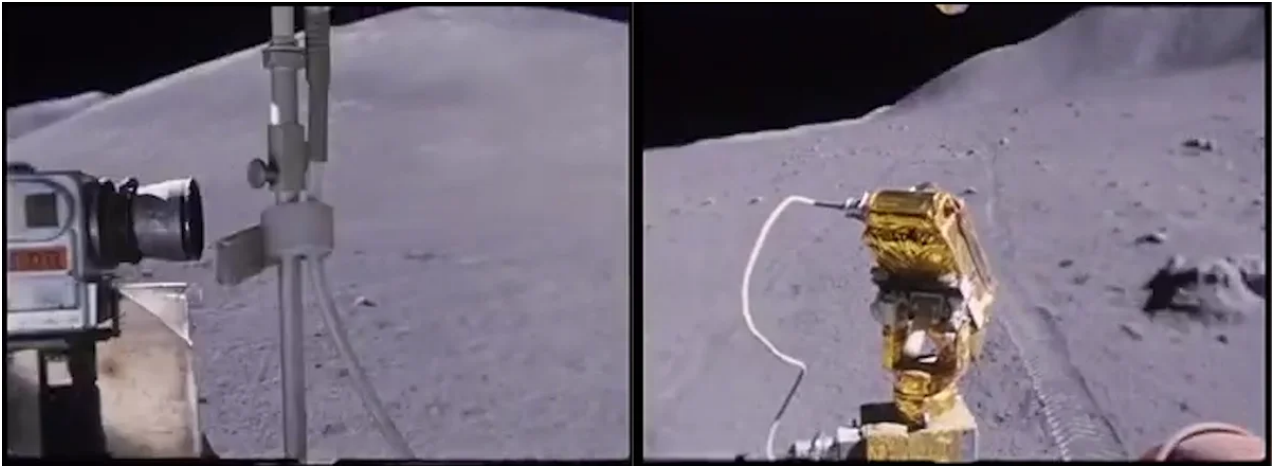


A frame with a live actor is inserted between the frames with the doll for a few seconds.

Here [the moment](#) when the actor is changed to a doll.

From the stationary doll, the panorama is immediately transferred to the road, to the landscape, the rover drives around the same place, passes the second time along its own track.

Sometimes, while driving, a part of the wheel appears in the frame, more precisely, the wing above the wheel. But no sand falls from under it (frame on the right), even when the rover stops. But I must!



Panorama 90 degrees to the right, from the toy camera to the front of the rover. In the shot (on the right), you can see the wing above the rover wheel, but we will not see the crumbling sand.

Why do we say that sand should fall off the wheels? Yes, because NASA showed us the passage of this rover from a side point, and we see how every now and then from under the wheels, captured by the lugs, the sand intensively flies out:

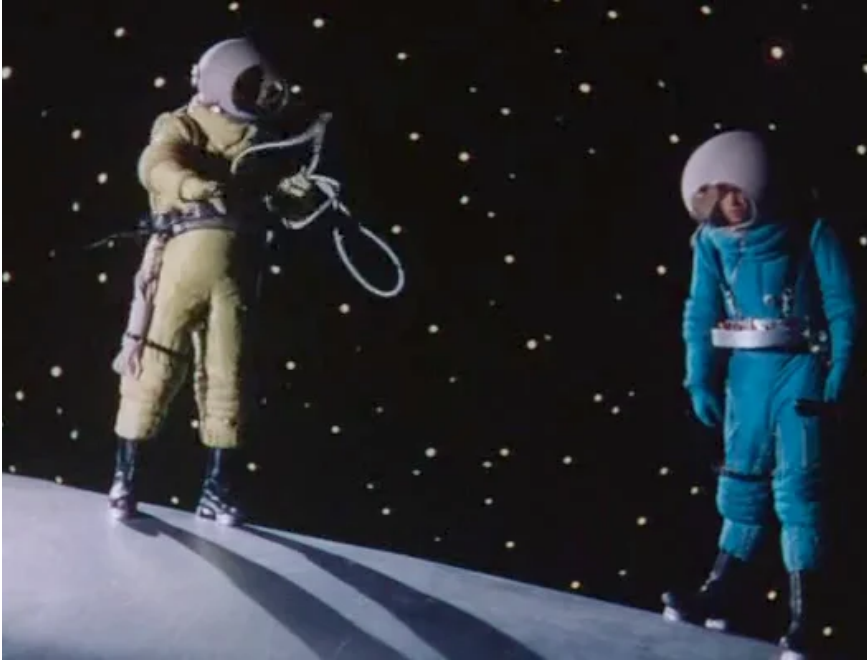


As the rover moves, sand is poured from the wheels. Doll from the mission "Apollo 16"

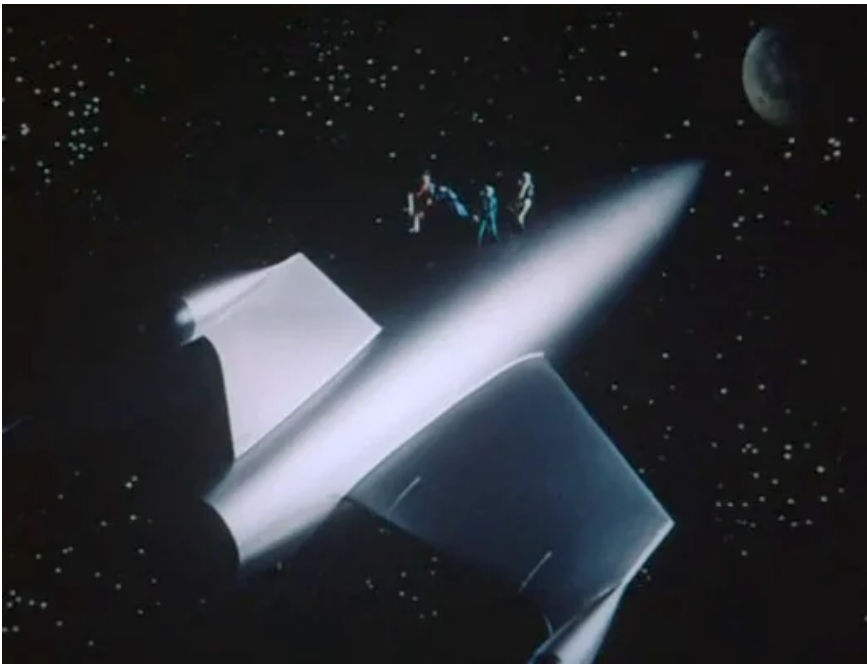
But for some reason, when the camera is transferred to the rover, the sand from under the wheels stops pouring. You watch the minute of travel, the second, third minute, fourth, the rover then drives up a small hill, then rapidly descends, but the scattering sand is not visible at all. The answer is simple. Long passages are shot frame by frame, like cartoons are filmed. We shot one static frame, moved the car forward a little - we shot the next frame, moved the toy car a little more - and again shot a static frame. So there is no moving sand anywhere.

Summarize. The technology of filming lunar frames in the Apollo missions is no different from the technology of filming any other Hollywood feature films of the 60-70s. XX century. In the shots, in the middle and general shots, there are actors, and in the distant shots, they are replaced with puppets.

Here's another example from the movie "Destination - Moon", two frames:



General plan - live actors. And then ...



Distant shot - dolls and a model of the ship.

*

Cameraman L. Konovalov was with you



Lecture at VGIK at the camera department.

Until next time!